



**US Army Corps  
of Engineers®**

## ***Norfolk District***

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### **Topic: 2007 Former Nansemond Ordnance Depot Update**

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**Background/Status:** The U.S. Army Corps of Engineers continues to make significant progress in its ordnance and environmental investigations efforts at the Former Nansemond Ordnance Depot (FNOD) site in Suffolk, Va. The former depot is listed on the EPA's National Priorities List.

#### **Key Points:**

- There are a total of six EPA-designated Source Areas and 23 other Areas of Concern (AOC) scattered throughout the 975-acre project site. Investigation and evaluation continues at four of the six EPA Source Areas. Five of the 23 AOCs have been fully evaluated and eliminated as potential hazardous sites. Fifteen of the remaining 18 AOCs are currently undergoing various levels of investigation (some nearing completion). Due to new requirements to gather additional data to evaluate potential risks at some sites currently undergoing investigation, start-up investigations at the remaining three AOCs were postponed to FY08 which begins Oct. 1, 2007.
- The Corps' munitions response efforts began at the former depot in 2000 and are expected to continue through 2009.
- In 2006, the Corps removed 87 military munitions items, 27 lbs of bulk explosives, 16,772.5 lbs of munitions debris, and 65,823 lbs of scrap. The 2006 munitions work was performed at the Nansemond River Beachfront and the Main Burning Ground (GE property).
- The Corps has recently awarded a new contract to continue munitions investigations and removal activities at FNOD. Munitions work remains to be completed in the following areas: a small portion of the Main Burning Ground, Nansemond River Beachfront, TCC Lake, J-Lake, North Athletic Field/Renovation Plant, and construction support for Areas of Concern 8 (Track A Magazine Line Disposal Pit) and 9 (Track A & B Burning Ground) site investigations.

#### **General Information:**

- **Restoration Advisory Board (RAB) Briefing** – The Corps will celebrate the RAB's 10-year anniversary at the June 7 RAB meeting and will brief the RAB on several topics, including: the ongoing groundwater investigation at Area of Concern 22 (Arsenic Investigation Area) located at the northwest corner of the former GE property (now Ashley Capital), the Nansemond River Beachfront stabilization alternatives, and site screening results for Area of Concern 10 (Track G Magazine Line located on TCC property). The 975-acre FNOD parcel includes the Tidewater Community College Portsmouth Campus (TCC) property and several surrounding properties.
- **The TNT Area** – The Corps is evaluating the most recent groundwater sampling results for the TNT area to determine the appropriate remedial alternatives to be evaluated for the site. Fortunately, the TNT concentrations in the groundwater appear to have been declining significantly over time through natural degradation as evidenced by small increases in several degradation byproducts such as DNT. However, slow migration of explosive compounds dissolved in groundwater is still occurring. The Corps has been evaluating several potential alternatives for addressing this site, including: monitored natural attenuation and chemical oxidation. It appears that monitored natural attenuation may be a viable alternative, but other remedies will be evaluated. Chemical oxidation may not be an efficient alternative here due to continued groundwater

movement which may require too many injection points over a larger area to be as effective as other alternatives that could be more cost effective and work just as well. The Corps is also evaluating a pump and treat technology for this site. The Corps will base final recommendations on a formal Feasibility Study considering all plausible alternatives which is expected to commence by the end of this year and be completed in 2008. There are no current users of groundwater in this area and treated potable water is supplied to Tidewater Community College and surrounding areas from municipal sources.

- **Main Burning Ground** – The Corps is continuing its munitions response investigation at the Main Burning Ground site located on GE property. There are eight 100-foot by 100-foot investigation grids left to investigate. Depending on the depths of the remaining grids, the Corps estimates that it can complete munitions removal activities at this site by the end of 2007.
- **Nansemond River Beachfront** – The Corps completed three disposal pits and three 100-foot long, 5-foot wide, evaluation trenches at the Nansemond River Beach in July 2006 in an effort to properly scope the upcoming removal response efforts at this area. That scoping effort discovered that the Nansemond River Beachfront area was an additional source area due to munitions and bulk explosive compounds found at some locations. Munitions were removed from the previously identified pits and the new information gathered from the trenches will greatly assist in planning for the subsequent munitions response effort that will be conducted here in late 2007 or 2008. Most of the material found in the pits and within the trenches behind the retaining wall, with the exception of the bulk explosives, was similar to the kinds of discarded military munitions that have been found in the immediate area previously: boosters, adapter boosters, primers, fuses, etc. However, the bulk explosives and small TNT bags were similar to material found at the FNOD TNT area located almost a half mile from the NRB. In addition, some British and French World War I fuzes, and some Civil War era grape shot were found that had not been found at FNOD before. The discovery of bulk explosive materials in the soil confirms that a release of hazardous material has occurred which triggers the need for a more extensive environmental study, a Remedial Investigation at the Nansemond River Beachfront to determine the nature and extent of contaminants present here. Working in this area is complicated by decades of landowner addition of rubble and fill to control erosion. The resulting ground is so unstable that shoreline stabilization will be required before munitions removal and excavation activities can commence. The Corps will be discussing the various shoreline stabilization alternatives at the June 7 RAB meeting.
- **Area of Concern -AOC 22 (Arsenic Investigation Area)** – This site is located at the northwest corner of the former GE Building (now Ashley Capital) property, straddling the boundary separating the Dominion Lands Horseshoe Shaped Pond Area. Elevated levels of arsenic has been detected in groundwater in a few monitoring wells at this site. The Corps is evaluating whether this arsenic is related to any unknown nearby source or whether it is naturally occurring due to localized geochemical conditions that result in driving naturally occurring arsenic in soil into solution. The Corps installed 5 more monitoring wells and has completed all four phases of the planned field investigation and will be discussing some of the sampling results at the June 7 RAB meeting.

#### **Anticipated Project Efforts for 2007:**

- Complete groundwater MNA (Monitoring Natural Attenuation) study for TNT area
- Commence the Feasibility Study for TNT area
- Shoreline Stabilization Surveys to support Feasibility Studies at both the James River Beachfront and the Nansemond River Beachfront
- Final Phases of AOC 22 Field Investigations
- Expanded Site Investigations for AOCs 10 and 11
- Completion of Draft Site Screening Reports for:
  - AOC 4 (GE Pond)

- AOC 12 (Track J)
- AOC 20 (Former Water Treatment Plant)
- AOC 23 (Renovation Plant)
- AOC 14/15 (Track K Magazine Line)
- MMRP Removal Action at the Nansemond River Beachfront
  - Including incorporation of shoreline stabilization design constraints

**For More Information:** Contact FNOD Program Manager, Adriane James, at 757-201-7701.